

UNIVERSITY OF ALASKA
ALASKA AGRICULTURAL EXPERIMENT STATION

PALMER, ALASKA

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DAIRY FARMING WITH DOLLARS AND SENSE

IN THE
MATANUSKA VALLEY

FARM MANAGEMENT STUDIES HAVE BEEN CARRIED ON SINCE 1947 EXCEPT FOR 1948 AND A TWO YEAR LAPSE DURING 1955-56. THESE STUDIES ARE A PART OF THE ECONOMIC PROGRAM OF RESEARCH DESIGNED TO PROVIDE INFORMATION THAT WILL ASSIST FARMERS IN ORGANIZING THEIR RESOURCES TO MINIMIZE COSTS, AID ECONOMIC DEVELOPMENT OF FARMS AND ULTIMATELY LOWER PRICES OF FARM PRODUCTS TO THE CONSUMER. THEY MAY BE USED AS A GUIDE FOR AGRICULTURAL DEVELOPMENT, RESEARCH AND EXTENSION PROGRAMS AND TO FACILITATE MARKETING.

WITH MODERN FACILITIES, IMPROVED MANAGEMENT PRACTICES AND INCREASED LABOR EFFICIENCY, A FULL TIME, ONE-MAN OPERATION HAS INCREASED IN SIZE TO THE POINT WHERE THE MINIMUM VOLUME OF PRODUCTION TO SUPPORT A FARM FAMILY FOR THE DIFFERENT ENTERPRISES WOULD PROBABLY BE IN THE AREA OF THE FOLLOWING: POULTRY - 40,000 DOZEN EGGS; DAIRY- 250,000 POUNDS OF MILK; POTATOES - 250 TONS AND GRAIN - 250 TONS PER YEAR.

INCREASED SIZE OF OPERATION HAS MEANT HIGHER TOTAL INVESTMENT COSTS. A. RULE OF THUMB TO FOLLOW WOULD BE TO FIGURE AN INVESTMENT COST OF \$10,000 FOR EACH 1,000 HENS (INCLUDES LAND, BUILDING, EQUIPMENT AND COST OF RAISING THE BIRDS), \$2,500 PER DAIRY COW (INCLUDES LAND, BUILDINGS, EQUIPMENT AND COWS) AND \$2,000 PER ACRE FOR POTATOES.

THE SUMMARY OF INCOME AND EXPENSES (TABLE 3 AND 4) SHOWS THE DAIRYMAN WITH THE WIDEST MARGIN ABOVE HIS CASH COSTS WAS THE PRODUCER WHOSE HERD AVERAGE PRODUCTION WAS 11,837 POUNDS PER COW, WELL ABOVE THE AVERAGE FOR THE 16 FARMS. THE FEED COSTS OF THIS PRODUCER WERE THE SECOND LOWEST. THESE FACTS INDICATE EFFICIENT USE OF FEED AND LOW COST OF FEED PRODUCTION. OTHER RELATIONSHIPS CAN BE NOTED BY USING TABLE 4 WITH TABLE 3. THE FIGURES ACROSS THE PAGE IN TABLE 3 APPLY TO DIFFERENT PRODUCERS IN THE STUDY. THE SAME FIGURES IN TABLE 4 ARE ARRAYED TO COMPARE EASILY RELATIONSHIP OF OTHER PRODUCERS.

MILK PRODUCTION PER COW HAS INCREASED. THIS INDICATES INCREASED EFFICIENCIES DAIRYMEN HAVE MADE AND MUST CONTINUE TO SEEK TO RETURN AN ADEQUATE INCOME TO OPERATOR AND FAMILY FOR LABOR AND MANAGEMENT.

DOLLARS AND SENSE DIFFERENCE OF HIGH VERSUS LOW INCOME DAIRY FARMS

Based on Records from Valley Farmers*	1954 Income and Expense		
	Low	High	Difference
<u>Total Farm Income</u>	\$16,930.00	\$25,784.00	\$+ 8,854.00
Milk Sales	16,238.00	24,130.00	+ 7,892.00
Other Income	692.00	1,654.00	+ 962.00
<u>Total Farm Expenses</u>	17,275.00	18,420.00	+ 1,145.00
Feed Purchased	3,576.00	4,971.00	+ 1,395.00
Hired Labor and Custom	1,520.00	3,972.00	+ 2,452.00
Fertilizer Purchased	1,069.00	2,106.00	+ 1,037.00
Seed Purchased	1,231.00	557.00	- 674.00
Machinery & Equipment	1,827.00	1,405.00	- 422.00
Other Cash Expense	7,836.00	5,365.00	- 2,471.00
Inventory Change (+ or -)	(- 216.00)	(- 44.00)	- 172.00
<u>Net Farm Income</u>	\$- 345.00	\$ 7,364.00	\$+ 7,709.00
Number of Milk Cows	20	21	+ 1
Milk per cow (lbs.)	7,416	10,303	+ 2,887
Acres Crop Land	111	128	+ 17
Cost per 100 lbs. Milk	\$ 10.46	\$ 7.31	\$- 3.15
Purchased Feed Cost per 100 lbs. milk	2.18	2.21	+ .03
Milk Sales per Cow	812.00	1,149.00	+ 337.00
Expense per Cow	864.00	877.00	+ 13.00

Why the Difference - Could it be largely due to:

- (1) High Production per cow and total sales volume? Extra 2,877 pounds per cow costs less. _____
- (2) Efficient use of more feed per cow? Both purchased and produced. _____
- (3) More hired labor and custom work? Does work on time and does it right. _____
- (4) Uses more fertilizer and less seed? Greater quantity of quality feed. More bromegrass, less oats and peas. _____
- (5) Controls minor and miscellaneous expenses? \$7,892 more milk sales with only \$1,145 more expense. _____

By H. P. Gazaway, Economist AAES - Project A1-1-5-1, July 195

*For more detail see "Farming in the Matanuska Valley-1954" by R. A. Andrews, Econ. A mineo. Cir. 9, AAES

Table I. A comparison of costs of producing 100 pounds of milk on dairy farms in the Matanuska Valley for the years 1953, 1954 and 1957, excluding the farmer's wages and interest on investment in the farm.

Item	1953 (25)	1954 (21)	1957 (16)
Labor Hired	.72	.58	.89
Feed Purchased	2.42	2.51	2.46
Seed and Supplies	.49	.79	.70
Machine Hire	.33	.22	.15
Truck Hauling, Freight, Express Etc.	.13	.13	.09
Repairs - Buildings, Fences	--	.07	.17
Repairs - Machinery, Equipment	.48	.39	.46
Vet. and Livestock Expense	.18	.15	.17
Fertilizers	.56	.73	1.13
Gas, Oil, Other Fuel	.46	.39	.58
Taxes	.13	.15*	.13
Insurance	.13	.12	.16
Interest	.37	.41	.64
Electricity and Telephone	.19**	.19**	.22
Rent	.57	.15	.14
Auto Upkeep, Farm Share	---	.18	.08
Other	.38	---	.07
TOTAL CASH COSTS	7.54	7.16	8.24
Over-head			
Cost of Machinery	.42	.45	1.08
Cost of Buildings	.38	.40	.40
SUB TOTAL	8.34	8.01	9.72
Livestock Appreciation ***	.37	.61	1.01
NET COST PER 100 POUNDS MILK	7.97	7.40	8.71

* Licenses

** No Telephone

*** Includes crops and livestock appreciation for 1957

Economics and Marketing Dept.
Agricultural Experiment Station.
Farm Management Research-Project 78.
Prepared by Charles E. Marsh Nov. 8, 1958

TABLE 2. INVESTMENT, COSTS AND RETURNS ON SIXTEEN
MATANUSKA VALLEY DAIRY FARMS DURING 1957. ALL VALUES
ARE MEANS OF SIXTEEN REPORTS.

ITEM	MEAN VALUE
FARM CAPITAL JANUARY 1, 1958	
LAND AND BUILDINGS	\$ 31,862
MACHINERY AND EQUIPMENT.	10,119
LIVESTOCK.	11,034
CROPS, FEED, SEED, ETC.	3,619
CASH AND ACCOUNTS RECEIVABLE	845
TOTAL CAPITAL.	\$ 57,479
CASH RECEIPTS	
DAIRY PRODUCTS.	\$ 19,088
CATTLE AND CALVES SOLD	309
OTHER SALES	1,632
TOTAL RECEIPTS.	\$ 21,029
EXPENDITURES	
HIRED LABOR	\$ 1,608
FEED BOUGHT	4,430
PURCHASED SEED AND SUPPLIES	1,267
MACHINERY HIRE	271
TRUCK HAULING, FREIGHT, EXPRESS ETC.	154
REPAIRS TO BUILDINGS AND EQUIPMENT.	1,134
VETERINARY FEES AND LIVESTOCK EXPENSE	302
FERTILIZER AND LIME PURCHASED	2,037
GAS, OIL AND OTHER FUEL	1,037
TAXES AND INSURANCE CHARGES	525
INTEREST PAID	1,157
ELECTRICITY AND TELEPHONE	402
RENT PAID	248
AUTO UPKEEP	148
OTHER CASH EXPENSES	135
TOTAL CASH EXPENDITURES.	\$ 14,855
NET CASH FARM INCOME	\$ 6,174
ESTIMATED VALUE OF PERQUISITES	1,500
NET INVENTORY CHANGES	1,824
IN CROPS AND LIVESTOCK.	1,824
IN MACHINERY AND BUILDINGS.	998
CHARGE FOR OWNERS NET INVESTMENT USE OF CAPITAL	--2,242
TOTAL NET RETURN TO OPERATOR AND FAMILY	\$ 8,254
MISCELLANEOUS	
AVERAGE HERD SIZE (NUMBER OF COWS MILKED)	16
ANNUAL MILK PRODUCTION, HUNDREDS OF POUNDS	1,803
COST PER HUNDREDWEIGHT OF MILK	
CASH	\$ 8.24
TOTAL	9.72
MEAN VALUE OF CHATTEL MORTGAGES	\$ 5,853
MEAN VALUE OF REAL ESTATE MORTGAGES	14,679

TABLE 3. A SUMMARY OF CASH EXPENSES, INCOME AND INVESTMENT ON SIXTEEN DAIRY FARMS
MATANUSKA VALLEY, ALASKA 1957.

TOTAL	AVERAGE:	PER COW	:	:	:	:	:	:	NET	:
CAPITAL	NUMBER	PRODUC--	DAIRY:	COST OF FEED 1/	:	EXPENSES PER	:	CASH	:	:
INVEST-	COWS	TION	SALES:	PER CWT OF MILK	:	CWT OF	:	COW PER:	FARM	:
MENT	MILKED	LBS.	:	BOUGHT; RAISED: TOTAL:	MILK 2/:	YEAR	:	INCOME:	:	:
\$ 69,330	13	11,837	\$1,225	\$.97	\$3.07	\$4.04	\$5.75	\$ 681	\$ 8,304	
50,470	15	12,718	1,318	2.53	1.44	3.97	6.16	783	9,095	
46,000	19	9,318	928	1.52	3.40	4.92	6.55	610	8,046	
20,800	8	9,930	999	3.32	2.78	6.10	7.14	709	2,318	
68,326	15	8,007	888	2.20	2.87	5.07	7.32	586	7,125	
34,320	13	10,231	1,196	2.23	2.85	5.08	7.43	760	6,348	
90,314	31	11,794	1,255	2.27	2.47	4.74	7.82	922	12,251	
81,000	27	13,063	1,438	2.38	3.42	5.80	8.02	1,048	11,616	
41,719	9	10,916	1,156	2.99	3.28	6.27	8.22	898	2,560	
31,524	11	10,311	1,094	2.36	3.95	6.31	8.78	906	5,683	
104,038	35	11,500	1,205	2.34	3.62	5.96	8.83	1,015	8,718	
42,660	7	11,633	1,360	3.15	4.01	7.16	9.02	1,050	4,751	
41,965	10	10,792	1,122	2.96	4.24	7.20	9.54	1,030	1,687	
56,526	15	11,128	1,226	3.92	2.00	5.92	9.64	1,072	2,444	
51,655	14	13,000	1,436	3.60	4.00	7.60	10.42	1,355	7,194	
75,500	19	8,394	978	1.89	5.36	7.25	11.24	944	654	
VE. \$ 56,634	16 3/	10,911	1,176	\$2.54	\$3.30	\$5.84	\$ 8.24	\$ 898	\$ 6,174	

- 1/ COST OF FEED RAISED WAS DETERMINED BY ALLOCATING EXPENSES AS FOLLOWS: 50% OF INTEREST, REPAIRS AND MAINTENANCE ON BUILDINGS AND FENCES; 75% OF SEED AND SUPPLIES, GAS, OIL, OTHER FUELS AND TAXES; 80% OF REPAIRS ON MACHINERY AND EQUIPMENT AND 100% OF RENT, MACHINE HIRE AND FERTILIZER. HIRED LABOR COSTS WERE NOT INCLUDED.
- 2/ PRODUCTION EXPENSES DO NOT INCLUDE DEPRECIATION ON MACHINERY AND BUILDINGS, INVENTORY CHANGES, CHARGES FOR OPERATOR AND FAMILY LABOR OR INTEREST ON INVESTMENT.
- 3/ THE TOTAL NUMBER OF MILK COWS AVERAGED 21 ON THE 16 FARMS STUDIED. THE AVERAGE NUMBER IN PRODUCTION THROUGHOUT THE YEAR WAS 16. THESE 16 FARMS ARE NOT NECESSARILY REPRESENTATIVE OF ALL THE MATANUSKA VALLEY GRADE A FARMS WHERE TOTAL NUMBER OF COWS RANGED FROM 5 TO 85 PER FARM DURING 1957.

CFM JRP
PROJECT 78 1/12/59
AAES PALMER, ALASKA

TABLE 4. A SUMMARY OF ARRAYED CASH EXPENSES, INCOME AND INVESTMENT ON SIXTEEN DAIRY FARMS, MATANUSKA VALLEY, ALASKA 1957

TOTAL CAPITAL INVESTMENT	: AVERAGE : : NUMBER : : COWS : : MILKED :	: PER COW : : PRODUCTION : : TION : : LBS. :	: DAIRY : : SALES : : :	COST OF FEED ^{1/} PER CWT OF MILK			EXPENSES PER : NET CWT OF : COW PER: CASH MILK ^{2/} : YEAR : FARM : : : INCOME		
				Bought	Raised	Total			
\$ 20,800	7	8,007	\$ 888	\$.97	\$1.44	\$3.97	\$ 5.75	\$ 586	\$ 654
31,524	8	8,394	928	1.52	2.00	4.04	6.16	610	1,687
34,320	9	9,318	978	1.89	2.47	4.74	6.55	681	2,318
41,719	10	9,930	999	2.20	2.78	4.92	7.14	709	2,444
41,965	11	10,231	1,094	2.23	2.85	5.07	7.32	760	2,560
42,660	13	10,311	1,122	2.27	2.87	5.08	7.43	783	4,751
46,000	13	10,792	1,156	2.34	3.07	5.80	7.82	898	5,683
50,470	14	0	0	2.36	3.28	0	8.02	0	0
51,655	15	10,916	1,196	2.38	0	5.92	8.22	906	6,348
56,526	15	11,128	1,205	2.53	3.40	5.96	0	922	7,125
0	15	11,500	1,225	0	3.42	6.10	8.78	944	7,194
68,326	0	11,633	1,226	2.96	3.62	6.27	8.83	1,015	8,046
69,330	19	11,794	1,255	2.99	3.95	6.31	9.02	1,030	8,304
75,500	19	11,837	1,318	3.15	4.00	7.16	9.54	1,048	8,718
81,000	27	12,718	1,360	3.32	4.01	7.20	9.64	1,050	9,095
90,314	31	13,000	1,436	3.60	4.24	7.25	10.42	1,072	11,616
104,038	35	13,063	1,438	3.92	5.36	7.60	11.24	1,355	12,251
E. 56,634	16 ^{4/}	10,911	1,176	2.54	3.30	5.84	8.24	898	6,174

^{1/} COST OF FEED RAISED WAS DETERMINED BY ALLOCATING EXPENSES AS FOLLOWS: 50% OF INTEREST, REPAIRS AND MAINTENANCE ON BUILDINGS AND FENCES; 75% OF SEED AND SUPPLIES, GAS, OIL, OTHER FUELS AND TAXES; 80% OF REPAIRS ON MACHINERY AND EQUIPMENT AND 100% OF RENT, MACHINE HIRE AND FERTILIZER. HIRED LABOR COSTS WERE NOT INCLUDED.

^{2/} PRODUCTION EXPENSES DO NOT INCLUDE DEPRECIATION ON MACHINERY AND BUILDINGS, INVENTORY CHANGES, CHARGES FOR OPERATOR AND FAMILY LABOR OR INTEREST ON INVESTMENT.

^{3/} THE AVERAGE GIVEN AT THE BOTTOM OF EACH COLUMN IS INDICATED BY THE LINE IN THE ARRAY.

^{4/} THE TOTAL NUMBER OF MILK COWS AVERAGED 21 ON THE 16 FARMS STUDIED. THE AVERAGE NUMBER IN PRODUCTION THROUGHOUT THE YEAR WAS 16. THESE 16 FARMS ARE NOT NECESSARILY REPRESENTATIVE OF ALL THE MATANUSKA GRADE A FARMS WHERE THE TOTAL NUMBER OF COWS PER FARM RANGED FROM 5 TO 85 IN 1957.

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